CLAIMS

1. A two-directional transportation apparatus, moving with and against the rotation direction, with the possibility to create movement through a differential speed, comprising a central orbit-gear wheel, an output-gear wheel with one more cog than the standard to create a movement against the rotation direction, another output gear-wheel with less cogs than the standard to create a movement with the rotation direction, these creating a transportation construction, which creates a movement with and against the rotation direction with a differential speed of both output-gear wheel ,which can be adjusted through the difference in the number of cogs; furthermore comprising:

two team of satellite gear wheels with the same pitch diameter but different number of cogs, these having encircle on pitch-circle of the orbit - gear wheel, each team of satellite gear wheel to create itself rotation of differential speed and meantime to drive two output-gear wheel to create a two-directional movement ;

the above mentioned two team of satellite gear-wheels, where one satellite gear-wheel has the normal number of cogs while the other satellite gearwheel has more or less cogs than the standard, with both team of satellite gearwheels installed on the 180 degree position of the flywheel and engage with pitch circle of two output gearwheels and the orbit-gear wheel, they are arranged on one axis, while flywheel is running to make both team of satellite gears to create themselves rotate motion, and two team of satellite gear wheels are encircling, they do themselves to be runed as cycloid motion, while one of output- gearwheel with less cogs than the

orbit-gearwheel is being pushed forward meanwhile the other output gearwheel with more cogs than the orbit- gearwheel is being pushed backwards, thus creating a motion with and against the rotating direction by the flywheel is running continues;

therefore the complete construction comprises of a flywheel、a central axis、a orbit-gearwheel an output-gearwheel for the output in direction of the rotation、another output-gearwheel for the output against the direction of the rotation、one team of satellite- gearwheel which include a input-gear and output gear, also other satellite-gearwheel team with a different number of cogs of one input gearwheel and one output-gear.

2. According to claim 1 the two-directional transportation apparatus, wherein at least upon two teams of satellite gearwheels have engage with around on the pitch circle of the orbit gearwheel and the satellite gearwheels that create the swinging motion as cycloid works according to a self rotation to be start movement mode.

3. According to claim 1 the two-directional transportation apparatus, wherein the two teams of satellite gear-wheels installed apart in the 0 degree and 180 degree position of the flywheel each team possess a different number of cogs, with a difference of at least one cog, with the while two teams of satellite gearwheels having engage and surround with the pitch circle of orbit gear wheel, thus create two team of satellite gearwheel to be cycloid movement with differential speed rotation, while to drive two output gearwheel run rotation ;

the formula to calculate the output speed is as follows:

Cognumber Output-Gearwheel as Cogs O.

Cognumber orbit Gearwheel as Cogs B

Cognumber Output-Satellite Gearwheel as Cogs T.

Cognumber Input Satellite Gearwheel as Cogs I

(CogsO÷CogsT)÷{[CogsB÷(CogsI÷CogT)] − [CogO÷(CogsI÷CogsT)]}

= i (output speed ratio)

4. According to claim 1 the two-directional transportation apparatus, wherein one output gear-wheel creates a movement against the rotation direction of the driving wheel, therefore having a number of 1 cog less than the number of cogs of the orbit gear wheel, with the reduction of the number of cogs having a variation effect on the output speed.

5. According to claim 1 the two-directional transportation apparatus, wherein one output gear-wheel creates a movement with the rotation direction of the encircling wheel, therefore having a number of cogs more than the number of cogs of the guiding gear-wheel, with the increase of the number of cogs having a variation effect on the output speed.

6. According to claim 1 the two-directional transportation apparatus, each team of satellite gear wheel may be composed of one input satellite gear wheel and another output satellite gear wheel ， wherein input satellite gearwheel to engage with pitch circle of orbit gearwheel, and output satellite gearwheel o engage with pitch circle of output gearwheel,

7. According to claim 1 the two-directional transportation apparatus , wherein the input satellite gearwheel engage with pitch circle of orbit gearwheel has the normal number of cogs, therefore output satellite gear-wheels engage with pitch circle of output gearwheels have to have a

number of cogs at least one cog less or more than the standard, thus influencing the output speed of the output gearwheel;

the formula to calculate the output speed is as follows: Cognumber Output-Gearwheel as Cogs O.

Cognumber orbit Gearwheel as Cogs B

Cognumber Output-Satellite Gearwheel as Cogs T.

Cognumber Input Satellite Gearwheel as Cogs I

(CogsO÷CogsT)÷ [(CogsB÷CogsI) – (CogO÷CogsT)] = i (output speed ratio)

8. According to claim 1 the two-directional transportation apparatus, the apparatus is composed of at least two team of satellite-gearwheels or more for construction.